



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Tfl

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/692,828

10/24/2003

Daniel James Dickinson

TE9A

9259

7590 06/04/2007
EUSTATHIOS VASSILIOU
TERMAX CORPORATION
920 REMINGTON AVE.
SCHAUMBURG, IL 60173

EXAMINER

RODRIGUEZ, RUTH C

ART UNIT PAPER NUMBER

3677

MAIL DATE DELIVERY MODE

06/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/692,828

10/24/2003

Daniel James Dickinson

TE9A

9259

7590 02/09/2007
EUSTATHIOS VASSILIOU
TERMAX CORPORATION
920 REMINGTON AVE.
SCHAUMBURG, IL 60173

EXAMINER

RODRIGUEZ, RUTH C

ART UNIT

PAPER NUMBER

3677

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

02/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/692,828	DICKINSON ET AL.	
	Examiner	Art Unit	
	Ruth C. Rodriguez	3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-100 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-100 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1, 47, 61 and 75 are objected to because of the following informalities:

- Claim 1 recites "the free end" and "the peak" in the thirteenth line.
- Claim 47 recites "the free end" and "the peak" in the fifteenth line.
- Claim 61 recites "the free end" and "the peak" in the sixteenth line.
- Claim 75 recites "the free end" and "the peak" in the twelfth line.

Correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

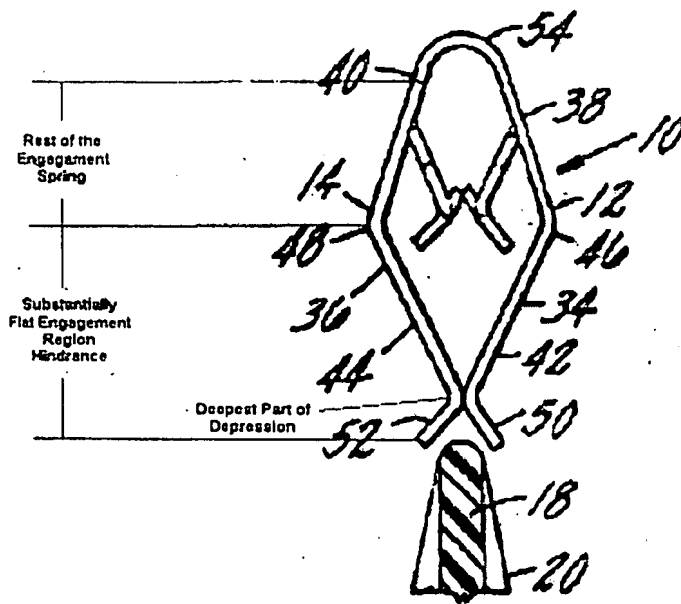
A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-7, 9-12, 14-17, 25-29, 33, 35-39, 41, 45-47, 49-53, 55, 59-61, 63-67, 69 and 73-76 are rejected under 35 U.S.C. 102(b) as being anticipated by Benedetti (US 4,402,118).

Art Unit: 3677

A spring fastener (10) comprises a first side (12) and a second side (14) opposite the first side (Figs. 1-8). The first side is connected to the second side thereby forming a U-shaped structure (Figs. 1-8). A bottom portion (54) connects the first side and the second side (Figs. 1-8). A first engagement spring (34) is connected to the first side in the vicinity of the bottom portion. The second side comprises second barbs (68) having second front ends and a second engagement spring (36). The second engagement spring is connected to the second side in the vicinity of the bottom portion (Figs. 1-8).



Each of the first and second engagement springs has a substantially flat engagement region with a hindrance portion (region of the engagement spring between 46 and the free end of the spring 34 or region of engagement spring between 48 and the free end of the spring 36) between a free end and a peak (46 or 48) in the vicinity of the peak (Figs. 1-8). The hindrance portion comprises only one to three ripples having the form of a depression (recess provided between 46 and the free end of the spring 34 and

recess provided between 48 and the free end of the spring 36) on the hindrance portion. The depression has a deepest part, a front side, a back side and a width (Figs. 1-8). The hindrance portion has a surface (between 46 and the free end of the spring 34 and between 48 and the free end of the spring 36) wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1-8).

Benedetti also discloses that:

- The hindrance portion comprises ripples (defined by the recess between 46 and the free end of the spring 34 and defined by the recess between 48 and the free end of the spring 36). Each ripple has the form of a depression (recess between 46 and the free end of the spring 34 and recess between 48 and the free end of the spring 36). The depression has a deepest part, a front side, a back side and a width (Figs. 1-8). The hindrance portion has a surface and comprises not more than three ripples wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1-8).
- The fastener has been made of a material having a thickness (measured between the peaks of the first and second engagement springs). The depth of the ripple is smaller than the thickness (Figs. 1-8).
- The hindrance portion comprises only one ripple (defined by the recess between 46 and the free end of the spring 34 or defined by the recess between 48 and the free end of the spring 36).

- The ripple width (measured from the peak to the free end) of each engagement spring is larger than the depth of the ripple.
- The ripple width is at least twice the size of the depth of the ripple.
- The back side has a slope in the range of 15 to 30 degrees with regard to the general plane (defined between the peak and the free end of the engagement spring) of the hindrance portion.
- The front side (top portion of 34 or 36 near the free end of the engagement spring) has a higher slope than the back side (bottom portion of 34 or 36 near the peak of the engagement spring).

A spring fastener (10) comprises a first side (12), a second side (14) opposite the first side, a bottom portion (54) and a top portion (Figs. 1-8). The first side is connected to the second side thereby forming a U-shaped structure having a cavity between the first side and the second side (Figs. 1-8). A bottom portion (54) connects the first side and the second side (Figs. 1-8). The first side comprises first barbs (66) having first front ends (68) and a first engagement spring (34) is connected to the first side in the vicinity of the bottom portion. The second side comprises second barbs (68) having second front ends and a second engagement spring (36) connected to the second side in the vicinity of the bottom portion (Figs. 1-8). Each of the first and second engagement springs has a free end (free end of 34 or 36) in the vicinity of the top portion (Figs. 1-8). Each of the first and second engagement springs also comprises a peak (46,48) and an engagement region substantially flat engagement region with a hindrance portion (region of the engagement spring between 46 and the free end of the

Art Unit: 3677

spring 34 or region of engagement spring between 48 and the free end of the spring 36) between a free end and a peak in the vicinity of the peak (Figs. 1-8). The hindrance portion comprises only one ripple (defined by the recess between 46 and the free end of the spring 34 and defined by the recess between 48 and the free end of the spring 36) having the form of a depression (recess provided between 46 and the free end of the spring 34 and recess provided between 48 and the free end of the spring 36) on the hindrance portion. The depression has a deepest part, a back side (near the free end) substantially lacking a front side (near the peak) and a width (Figs. 1-8). The hindrance portion has a surface (between the peak and the free end) wherein the depth of the ripple is the distance between the surface of the hindrance and the deepest part of the ripple (Figs. 1-8). The ripple provides increased removal force and when the fastener is pulled by an extension (20) of a first part (16) engaged to the first and second barbs after the fastener has been inserted into a slot (28) of a second part (26) (Figs. 1-8). The slot having a slot width and edges on which edges the engagement region is engaged (Figs. 1-8). It is inherent that the increased removal force is due to the hindrance portion and the fastener can be extracted when pulled by the extension without damage to the fastener as Figs. 1-8 since the spring fastener only engages the sides of the slot in order to retain the spring fastener and upon application of a considerable amount of force the spring fastener can deform allowing the disengagement of spring fastener and the slot without causing any damage to the spring fastener.

Art Unit: 3677

- The back side has the form of a curvature with a gradually decreased slope (Figs. 1-8).
- The barbs are selected from a group consisting essentially of: first barbs being outer barbs and second barbs being inner barbs and first barbs being inner barbs and the second barbs being inner barbs (Figs. 1-8).
- The barbs are selected from a group consisting essentially of: first barbs being outer barbs and second barbs being inner barbs where the first barbs are outside outer barbs and the second barbs are inside outer barbs and first barbs being inner barbs and the second barbs being inner barbs (Figs. 1-8).
- The fastener has a width in the vicinity of the top portion of the fastener that is at least 60% as wide as the slot width (Figs. 1, 3 and 5-7).
- The engagement region is at least partially wider than the rest of the engagement spring (Fig. 4).

For claim 33, the same rejection of claim 1 applies to claim 33 that claims an assembly having a first part (16) that comprises an extension (20) and a spring fastener in accordance to claim 1 where the fastener can be extracted when pulled by the rib without damage to the fastener (Figs. 1-8).

Regarding claim 38, the same rejection of claim 11 applies to claim 38 that claims an assembly having a first part that comprises an extension (70) and a spring fastener in accordance to claim 11 where the fastener can be extracted when pulled by the rib without damage to the fastener (Figs. 1-8).

For claim 47, the same rejection of claim 1 applies to claim 47 that claims an assembly having a second part with a slot and a spring fastener in accordance to claim 1 where the fastener can be inserted into the slot and extracted when pulled by an extension without damage to the fastener (Figs. 1-8).

Regarding claim 52, the same rejection of claim 11 applies to claim 52 that claims an assembly having a second part with a slot and a spring fastener in accordance to claim 11 where the fastener can be inserted into the slot and extracted when pulled by an extension without damage to the fastener (Figs. 1-8).

For claim 61, the same rejection of claim 1 applies to claim 61 that claims a vehicle (C. 2, L. 59-61) comprising an assembly having a first part with an extension and a second part with a slot and a spring fastener in accordance to claim 1 where the fastener can be inserted into the slot and extracted when pulled by the rib without damage to the fastener (Figs. 1-8).

Regarding claim 66, the same rejection of claim 11 applies to claim 66 that claims a vehicle comprising an assembly having a first part with an extension and a second part with a slot and a spring fastener in accordance to claim 11 where the fastener can be inserted into the slot and extracted when pulled by the rib without damage to the fastener (Figs. 1-8).

For claim 75, the same rejection of claim 1 applies to claim 75 since the hindrance portion comprises one structure selected from ripple (defined by the recess provided between 46 and the free end of the spring 34 and defined by the recess provided between 48 and the free end of the spring 36), side rib, upward solid bent

extension parallel to the peak and the free end, knurled region and a combination thereof (Figs. 1-8). Each hindrance portion has a depth (Figs. 1-8).

Regarding claim 76, the same rejection of claim 75 applies to claim 76 that claims a vehicle (C. 2, L. 59-61) comprising parts (16,26) connected with the fastener of claim 75.

4. Claims 1, 3-7, 10-12, 14-17, 25, 30, 31, 33, 35-39, 41, 47, 40, 50, 52, 53, 55, 61, 63, 64, 66, 67, 69, 75 and 76 are rejected under 35 U.S.C. 102(b) as being anticipated by Osterland et al. (US 6,928,705 B2).

A spring fastener (20,120) comprises a first side (22,122) and a second side (22,122) opposite the first side (Figs. 1-21). The first side is connected to the second side thereby forming a U-shaped structure (20,120) having a cavity between the first side and the second side (Figs. 1-21). A bottom portion (40,140) connects the first side and the second side and a top portion (24,124). The first side comprises first barbs (26,126) having first front ends and a first engagement spring (28,128). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1-21). The second side comprises second barbs (26,126) having second front ends and a second engagement spring (28,128). The second engagement spring connected to the second side in the vicinity of the bottom portion (Figs. 1-21). Each of the first and second engagement springs has a free end (end of 28,128) in the vicinity of the top portion and also comprises a peak (at 37,137) and an engagement region (36,136) with a hindrance portion (region of the engagement spring between 37,137 and the free end

Art. Unit: 3677

of the spring 28,128) between the free end and the peak in the vicinity of the peak (Figs. 1-21).

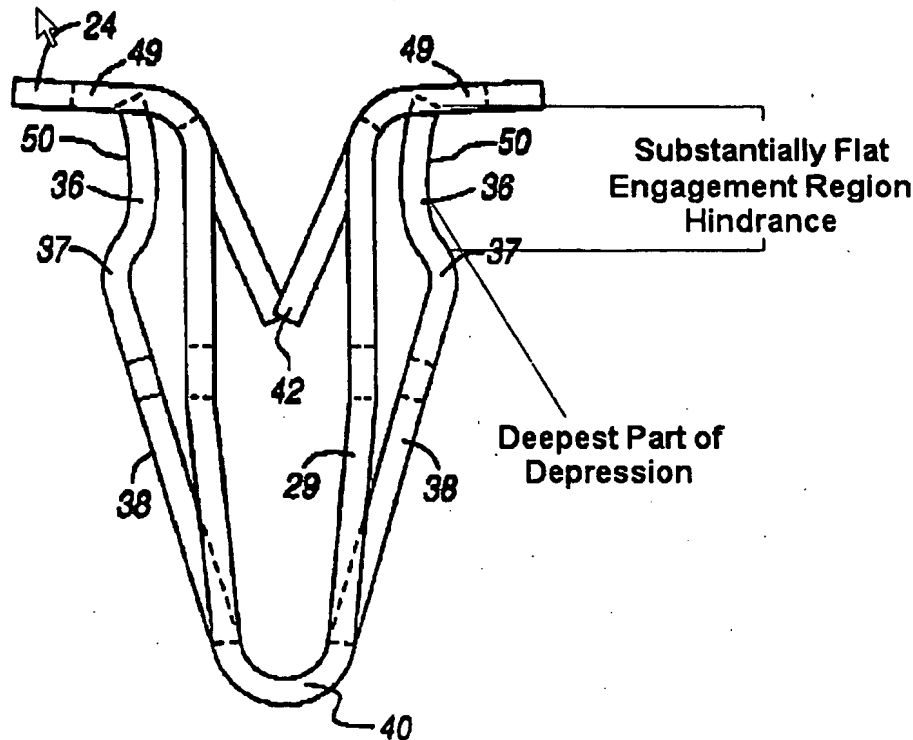


FIGURE 4

The hindrance portion comprises only one to three ripples having the form of a depression (recess provided between 37,137 and the free end of the spring 28,128) on the hindrance portion. The depression has a deepest part, a front side, a back side and a width (Figs. 1-8). The hindrance portion has a surface (between 37,137 and the free end of the spring 28,128) wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1-21).

Osterland also discloses that:

- The hindrance portion comprises ripples (defined by the recess between the peak 37 and the free end 26 the spring 34 and defined by the recess between 137 and the free bend 126 of the spring). Each ripple has the form of a depression (recess between the peak 37 and the free end 26 the spring 34 or the recess between 137 and the free bend 126 of the spring). The depression has a deepest part, a front side, a back side and a width (Figs. 1-21). The hindrance portion has a surface and comprises not more than three ripples wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1-21).

- The fastener has been made of a material having a thickness (measured between the peaks of the first and second engagement springs). The depth of the ripple is smaller than the thickness (Figs. 1-21).

- The hindrance portion comprises only one ripple (defined by the recess between the peak 37 and the free end 28 of the spring or defined by the recess between the peak 137 and the free end 128 of the spring).

- The ripple width (measured from the peak to the free end) of each engagement spring is larger than the depth of the ripple (Figs. 1-21).

- The ripple width is at least twice the size of the depth of the ripple.

- The back side has a slope in the range of 15 to 30 degrees with regard to the general plane (defined between the peak and the free end of the engagement spring) of the hindrance portion (Figs. 1-21).

- The front side (top portion of 34 or 36 near the free end of the engagement spring) has a higher slope than the back side (bottom portion of 34 or 36 near the peak of the engagement spring).

A spring fastener (20,120) comprises a first side (22,122) and a second side (22,122) opposite the first side (Figs. 1-21). The first side is connected to the second side thereby forming a U-shaped structure (20,120) having a cavity between the first side and the second side (Figs. 1-21). A bottom portion (40,140) connects the first side and the second side and a top portion (24,124). The first side comprises first barbs (26,126) having first front ends and a first engagement spring (28,128). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1-21). The second side comprises second barbs (26,126) having second front ends and a second engagement spring (28,128). The second engagement spring connected to the second side in the vicinity of the bottom portion (Figs. 1-21). Each of the first and second engagement springs has a substantially flat engagement region (36,136) with a hindrance portion (region of the engagement spring between 37,137 and the free end of the spring 28,128) between a free end and a peak (37,137) in the vicinity of the peak (Figs. 1-21). The hindrance portion comprises only one to three ripples having the form of a depression (recess provided between 37,137 and the free end of the spring 28,128) on the hindrance portion. The depression has a deepest part, a front side, a back side and a width (Figs. 1-8). The hindrance portion has a surface (between 37,137 and the free end of the spring 28,128) wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1-21).

Osterland also discloses that:

- The back side has the form of a curvature with a gradually decreasing slope (Figs. 1-21).
- The barbs are selected from a group consisting essentially of: first barbs being outer barbs and second barbs being inner barbs where the first barbs are outside outer barbs and the second barbs are inside outer barbs and first barbs being inner barbs and the second barbs being inner barbs (Figs. 1-21).
- The fastener has a width in the vicinity of the top portion of the fastener that is at least 60% as wide as the slot width (Figs. 10A-11 and 20A-21).
- The fastener further comprises additional lower barbs (137) pointing inwardly and originating from the vicinity of the bottom portions of the first side and the second side of the fastener (Figs. 12-21).
- Each side of the spring fastener has only one upper barb and one lower barb (Figs. 12-21). The upper barb of one side facing the lower barb of the other side and vice versa (Figs. 12-21).

For claim 33, the same rejection of claim 1 applies to claim 33 that claims an assembly having a first part (60) that comprises an extension (54) and a spring fastener in accordance to claim 1 where the fastener can be extracted when pulled by the rib without damage to the fastener (Figs. 1-21).

Regarding claim 38, the same rejection of claim 11 applies to claim 38 that claims an assembly having a first part that comprises an extension (24) and a spring

Art Unit: 3677

fastener in accordance to claim 11 where the fastener can be extracted when pulled by the rib without damage to the fastener (Figs. 1-21).

For claim 47, the same rejection of claim 1 applies to claim 47 that claims an assembly having a second part (56) with a slot (58) and a spring fastener in accordance to claim 1 where the fastener can be inserted into the slot and extracted when pulled by an extension without damage to the fastener (Figs. 1-21).

Regarding claim 52, the same rejection of claim 11 applies to claim 52 that claims an assembly having a second part with a slot and a spring fastener in accordance to claim 11 where the fastener can be inserted into the slot and extracted when pulled by an extension without damage to the fastener (Figs. 1-21).

For claim 61, the same rejection of claim 1 applies to claim 61 that claims a vehicle (C. 1, L. 28-34) comprising an assembly having a first part with an extension and a second part with a slot and a spring fastener in accordance to claim 1 where the fastener can be inserted into the slot and extracted when pulled by the rib without damage to the fastener (Figs. 1-21).

Regarding claim 66, the same rejection of claim 11 applies to claim 66 that claims a vehicle comprising an assembly having a first part with an extension and a second part with a slot and a spring fastener in accordance to claim 11 where the fastener can be inserted into the slot and extracted when pulled by the rib without damage to the fastener (Figs. 1-21).

For claim 75, the same rejection of claim 1 applies to claim 75 since the hindrance portion comprises one structure selected from ripple (defined by the recess

Art Unit: 3677

provided between 37 and the free end of the spring 28 and defined by the recess provided between 137 and the free end of the spring 128), side rib, upward solid bent extension parallel to the peak and the free end, knurled region and a combination thereof (Figs. 1-21). Each hindrance portion has a depth (Figs. 1-21).

Regarding claim 76, the same rejection of claim 75 applies to claim 76 that claims a vehicle (C. 1, L. 28-34) comprising parts (56,60) connected with the fastener of claim 75.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 8, 13, 34, 40, 48, 54, 62 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benedetti.

Benedetti discloses a spring fastener with all the limitations listed above in paragraph 3 for the rejection of claims 11. Benedetti fails to disclose that the gradually decreasing slope has the shape of an arch in the range of 50-70 degrees and the arch has a radius of 0.03 to 0.05 mm. However, it would have been obvious matter of design choice to provide a gradually decreasing slope has the shape of an arch in the range of 50-70 degrees and the radius of the arch being 0.03 to 0.05 mm, since such a

Art Unit: 3677

modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237, (CCPA 1955).

Benedetti discloses a spring fastener with all the limitations listed above in paragraph 3 for the rejection of claims 11. Benedetti fail to disclose the dimensions of the spring fastener. However, it would have been obvious matter of design choice to provide the dimension cited in the claims since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237, (CCPA 1955).

7. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benedetti in view of Smith (US 5,987,714).

Benedetti discloses a spring fastener with all the limitations listed above in paragraph 3 for the rejection of claims 11. Benedetti fails to disclose that the spring fastener has a relief opening in the vicinity of the bottom of the spring fastener. However, Smith teaches a spring fastener comprising spring fastener (10) comprises a first side (28) and a second side (30) opposite the first side (Figs. 1-7). The first side is connected to the second side thereby forming a U-shaped structure having a cavity between the first side and the second side (Figs. 1-7). A bottom portion (24) connects the first side and the second side and a top portion. The spring fastener has a relief opening (26) in the vicinity of the bottom of the spring fastener. The opening is useful for modifying the springiness between the two sides and for other purposes (C. 3, L. 25-

Art Unit: 3677

29). Therefore, it would have been obvious to one having ordinary skill in the art at the time of Applicant's invention to have a relief opening in the vicinity of the bottom of the spring fastener as taught by Smith in the spring fastener of Benedetti. Doing so, is useful for modifying the springiness between the two sides and for other purposes.

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Osterland in view of Smith (US 5,987,714).

Osterland discloses a spring fastener with all the limitations listed above in paragraph 3 for the rejection of claims 11. Benedetti fails to disclose that the spring fastener has a relief opening in the vicinity of the bottom of the spring fastener.

However, Smith teaches a spring fastener comprising spring fastener (10) comprises a first side (28) and a second side (30) opposite the first side (Figs. 1-7). The first side is connected to the second side thereby forming a U-shaped structure having a cavity between the first side and the second side (Figs. 1-7). A bottom portion (24) connects the first side and the second side and a top portion. The spring fastener has a relief opening (26) in the vicinity of the bottom of the spring fastener. The opening is useful for modifying the springiness between the two sides and for other purposes (C. 3, L. 25-29). Therefore, it would have been obvious to one having ordinary skill in the art at the time of Applicant's invention to have a relief opening in the vicinity of the bottom of the spring fastener as taught by Smith in the spring fastener of Osterland. Doing so, is useful for modifying the springiness between the two sides and for other purposes.

9. Claims 18-24, 42-44, 56-58 and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benedetti in view of Vassiliou (US 6,691,380 B1).

Benedetti discloses a spring fastener with all the limitations listed above in paragraph 3 for the rejection of claims 17 and 21. Benedetti fails to disclose the material from which the spring fastener was made from has a thickness and the front points of the outside barbs are at a distance from the second side smaller than the thickness of the material. However, Vassiliou teaches a spring fastener (10) comprises a first side (18) and a second side (20) opposite the first side (Figs. 1 and 8). The first side is connected to the second side thereby forming a U-shaped structure having a cavity (16) between the first side and the second side (Figs. 1 and 8). A bottom portion connects the first side and the second side and a top portion (26) (Figs. 1 and 8). The first side comprises first barbs (12) having first front ends and a first engagement spring (29). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1 and 8). The second side comprises second barbs (14) having second front ends and a second engagement spring (31). The second engagement spring connected to the second side in the vicinity of the bottom portion (Figs. 1 and 8). Each of the first and second engagement springs has a free end (Figs. 1 and 8) in the vicinity of the top portion and also comprises a peak and an engagement region with a hindrance portion (29i,31i) between the free end and the peak (Figs. 1-25). The hindrance portion comprises one structure selected from one to three teeth (29i,31i) and each tooth has the form of a depression. The depression having a deepest part, a front side, a back side and a width (Figs. 1 and 8). The hindrance portion having a surface wherein the depth of each teeth is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1 and 8). The teeth provides

Art Unit: 3677

increased removal force when the fastener is pulled by an extension of a first part engaged to the first and second barbs after the fastener has been inserted into a slot of a second part (C. 4, L. 1-12 and Fig. 8). The slot has a slot width and edges on which edges the engagement region is engaged (Figs. 7 and 8). At least one barb is cut from its respective side, flexible and bent at its respective front end (24,30) (C. 4, L. 54-56, C. 5, L. 7-18 and Figs. 1-1B, 3-5 and 8). The bent improves flexibility and adds holding power between the spring and the objection being held within the spring (C. 4, L. 54 and C. 5, L. 1-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bent at least one barb being cut from its respective side, flexible and bent at its respective front end as taught by Vassiliou in the fastener disclosed by Benedetti. Doing so, improves flexibility and adds holding power between the spring and the objection being held within the spring.

Benedetti discloses a spring fastener with all the limitations listed above in paragraph 3 for the rejection of claims 17 and 21. Benedetti fails to disclose the material from which the spring fastener was made from has a thickness and the front points of the outside barbs are at a distance from the second side smaller than the thickness of the material. However, Vassiliou teaches a spring fastener (10) comprises a first side (18) and a second side (20) opposite the first side (Figs. 1 and 8). The first side is connected to the second side thereby forming a U-shaped structure having a cavity (16) between the first side and the second side (Figs. 1 and 8). A bottom portion connects the first side and the second side and a top portion (26) (Figs. 1 and 8). The first side comprises first barbs (12) having first front ends and a first engagement spring

(29). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1 and 8). The second side comprises second barbs (14) having second front ends and a second engagement spring (31). The second engagement spring connected to the second side in the vicinity of the bottom portion (Figs. 1 and 8). Each of the first and second engagement springs has a free end (Figs. 1 and 8) in the vicinity of the top portion and also comprises a peak and an engagement region with a hindrance portion (29i,31i) between the free end and the peak (Figs. 1-25). The hindrance portion comprises one structure selected from one to three ripples (29i,31i) and each ripple has the form of a depression. The depression having a deepest part, a front side, a back side and a width (Figs. 1 and 8). The hindrance portion having a surface wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1 and 8). The ripple provides increased removal force when the fastener is pulled by an extension of a first part engaged to the first and second barbs after the fastener has been inserted into a slot of a second part (C. 4, L. 1-12 and Fig. 8). The slot has a slot width and edges on which edges the engagement region is engaged (Figs. 7 and 8). At least one barb is cut from its respective side, flexible and bent at its respective front end (24,30) (Figs. 1-8). The material from which the spring fastener was made from has a thickness and the front points of the outside barbs are at a distance from the second side smaller than the thickness of the material (C. 5, L. 39-43). The bent provides additional holding power between the spring and the objection being held within the spring (C. 5, L. 35-36). Therefore, it would have been obvious to one having ordinary skill in the art at the time

Art Unit: 3677

the invention was made to have the bent at its respective front end of the barb as taught by Vassiliou in the fastener disclosed by Benedetti. Doing so, increases the holding power between the spring and the object being held within the spring.

10. Claims 18-24, 42-44, 56-58 and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osterland in view of Vassiliou (US 6,691,380 B1).

Osterland discloses a spring fastener with all the limitations listed above in paragraph 4 for the rejection of claims 17 and 21. Osterland fails to disclose the material from which the spring fastener was made from has a thickness and the front points of the outside barbs are at a distance from the second side smaller than the thickness of the material. However, Vassiliou teaches a spring fastener (10) comprises a first side (18) and a second side (20) opposite the first side (Figs. 1 and 8). The first side is connected to the second side thereby forming a U-shaped structure having a cavity (16) between the first side and the second side (Figs. 1 and 8). A bottom portion connects the first side and the second side and a top portion (26) (Figs. 1 and 8). The first side comprises first barbs (12) having first front ends and a first engagement spring (29). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1 and 8). The second side comprises second barbs (14) having second front ends and a second engagement spring (31). The second engagement spring connected to the second side in the vicinity of the bottom portion (Figs. 1 and 8). Each of the first and second engagement springs has a free end (Figs. 1 and 8) in the vicinity of the top portion and also comprises a peak and an engagement region with a hindrance portion (29i,31i) between the free end and the peak (Figs. 1-25). The

hindrance portion comprises one structure selected from one to three teeth (29i,31i) and each tooth has the form of a depression. The depression having a deepest part, a front side, a back side and a width (Figs. 1 and 8). The hindrance portion having a surface wherein the depth of each teeth is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1 and 8). The teeth provides increased removal force when the fastener is pulled by an extension of a first part engaged to the first and second barbs after the fastener has been inserted into a slot of a second part (C. 4, L. 1-12 and Fig. 8). The slot has a slot width and edges on which edges the engagement region is engaged (Figs. 7 and 8). At least one barb is cut from its respective side, flexible and bent at its respective front end (24,30) (C. 4, L. 54-56, C. 5, L. 7-18 and Figs. 1-1B, 3-5 and 8). The bent improves flexibility and adds holding power between the spring and the objection being held within the spring (C. 4, L. 54 and C. 5, L. 1-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bent at least one barb being cut from its respective side, flexible and bent at its respective front end as taught by Vassiliou in the fastener disclosed by Osterland. Doing so, improves flexibility and adds holding power between the spring and the objection being held within the spring.

Osterland discloses a spring fastener with all the limitations listed above in paragraph 4 for the rejection of claims 17 and 21. Osterland fails to disclose the material from which the spring fastener was made from has a thickness and the front points of the outside barbs are at a distance from the second side smaller than the thickness of the material. However, Vassiliou teaches a spring fastener (10) comprises

Art Unit: 3677

a first side (18) and a second side (20) opposite the first side (Figs. 1 and 8). The first side is connected to the second side thereby forming a U-shaped structure having a cavity (16) between the first side and the second side (Figs. 1 and 8). A bottom portion connects the first side and the second side and a top portion (26) (Figs. 1 and 8). The first side comprises first barbs (12) having first front ends and a first engagement spring (29). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1 and 8). The second side comprises second barbs (14) having second front ends and a second engagement spring (31). The second engagement spring connected to the second side in the vicinity of the bottom portion (Figs. 1 and 8). Each of the first and second engagement springs has a free end (Figs. 1 and 8) in the vicinity of the top portion and also comprises a peak and an engagement region with a hindrance portion (29i,31i) between the free end and the peak (Figs. 1-25). The hindrance portion comprises one structure selected from one to three ripples (29i,31i) and each ripple has the form of a depression. The depression having a deepest part, a front side, a back side and a width (Figs. 1 and 8). The hindrance portion having a surface wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1 and 8). The ripple provides increased removal force when the fastener is pulled by an extension of a first part engaged to the first and second barbs after the fastener has been inserted into a slot of a second part (C. 4, L. 1-12 and Fig. 8). The slot has a slot width and edges on which edges the engagement region is engaged (Figs. 7 and 8). At least one barb is cut from its respective side, flexible and bent at its respective front end (24,30) (Figs. 1-8).

Art Unit: 3677

The material from which the spring fastener was made from has a thickness and the front points of the outside barbs are at a distance from the second side smaller than the thickness of the material (C. 5, L. 39-43). The bent provides additional holding power between the spring and the objection being held within the spring (C. 5, L. 35-36).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bent at its respective front end of the barb as taught by Vassiliou in the fastener disclosed by Osterland. Doing so, increases the holding power between the spring and the object being held within the spring.

11. Claims 18-21, 42, 43, 56, 57, 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benedetti in view of Vassiliou (US 6,279,207 B1).

Benedetti discloses a spring fastener with all the limitations listed above in paragraph 3 for the rejection of claims 1 and 14 where at least one barb is cut from its respective side and flexible. Benedetti fails to disclose that at least one barb has a bent at its respective front end. However, Vassiliou teaches a spring fastener (10) comprises a first side (18) and a second side (20) opposite the first side (Figs. 1 and 8). The first side is connected to the second side thereby forming a U-shaped structure having a cavity (16) between the first side and the second side (Figs. 1 and 8). A bottom portion connects the first side and the second side and a top portion (26) (Figs. 1 and 8). The first side comprises first barbs (12) having first front ends and a first engagement spring (29). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1 and 8). The second side comprises second barbs (14) having second front ends and a second engagement spring (31). The second engagement spring

connected to the second side in the vicinity of the bottom portion (Figs. 1 and 8). Each of the first and second engagement springs has a free end (Figs. 1 and 8) in the vicinity of the top portion and also comprises a peak and an engagement region with a hindrance portion (29i,31i) between the free end and the peak (Figs. 1-25). The hindrance portion comprises one structure selected from one to three ripples (29i,31i) and each ripple has the form of a depression. The depression having a deepest part, a front side, a back side and a width (Figs. 1 and 8). The hindrance portion having a surface wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1 and 8). The ripple provides increased removal force when the fastener is pulled by an extension of a first part engaged to the first and second barbs after the fastener has been inserted into a slot of a second part (C. 4, L. 1-12 and Fig. 8). The slot has a slot width and edges on which edges the engagement region is engaged (Figs. 7 and 8). At least one barb is cut from its respective side, flexible and bent at its respective front end (Figs. 1-8). The bent provides additional holding power between the spring and the objection being held within the spring (C. 3, L. 29-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bent at its respective front end of the barb as taught by Vassiliou in the fastener disclosed by Benedetti. Doing so, increases the holding power between the spring and the object being held within the spring.

12. Claims 18-21, 42, 43, 56, 57, 70 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osterland in view of Vassiliou (US 6,279,207 B1).

Osterland discloses a spring fastener with all the limitations listed above in paragraph 4 for the rejection of claims 1 and 14 where at least one barb is cut from its respective side and flexible. Osterland fails to disclose that at least one barb has a bent at its respective front end. However, Vassiliou teaches a spring fastener (10) comprises a first side (18) and a second side (20) opposite the first side (Figs. 1 and 8). The first side is connected to the second side thereby forming a U-shaped structure having a cavity (16) between the first side and the second side (Figs. 1 and 8). A bottom portion connects the first side and the second side and a top portion (26) (Figs. 1 and 8). The first side comprises first barbs (12) having first front ends and a first engagement spring (29). The first engagement spring connected to the first side in the vicinity of the bottom portion (Figs. 1 and 8). The second side comprises second barbs (14) having second front ends and a second engagement spring (31). The second engagement spring connected to the second side in the vicinity of the bottom portion (Figs. 1 and 8). Each of the first and second engagement springs has a free end (Figs. 1 and 8) in the vicinity of the top portion and also comprises a peak and an engagement region with a hindrance portion (29i,31i) between the free end and the peak (Figs. 1-25). The hindrance portion comprises one structure selected from one to three ripples (29i,31i) and each ripple has the form of a depression. The depression having a deepest part, a front side, a back side and a width (Figs. 1 and 8). The hindrance portion having a surface wherein the depth of each ripple is the distance between the surface of the hindrance and the deepest part of the respective ripple (Figs. 1 and 8). The ripple provides increased removal force when the fastener is pulled by an extension of a first

part engaged to the first and second barbs after the fastener has been inserted into a slot of a second part (C. 4, L. 1-12 and Fig. 8). The slot has a slot width and edges on which edges the engagement region is engaged (Figs. 7 and 8). At least one barb is cut from its respective side, flexible and bent at its respective front end (Figs. 1-8). The bent provides additional holding power between the spring and the objection being held within the spring (C. 3, L. 29-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the bent at its respective front end of the barb as taught by Vassiliou in the fastener disclosed by Osterland. Doing so, increases the holding power between the spring and the object being held within the spring.

Response to Arguments

1. Applicant's arguments filed 12 October 2006 have been fully considered but they are not persuasive.
2. The Applicant argues that Benedetti has outwardly angled lead portions 50 and 52 that were identified as the hindrance portion and depression without any distinction. The Examiner fails to be persuaded by this argument. The Examiner has revised the rejection in order to make clear that the hindrance is located between the peak 46 or 48 and the free end of each respective spring 34 or 36. This hindrance comprises a depression whose side near the peak serves to retain the clip in engagement with the slot of the second part or member as required by the claims and that has a ripple

formed in conjunction with the outwardly angled leading portion 50 or 52. Therefore, Benedetti meets these claim limitations.

3. The Applicant argues that reference to Figures 1-8 is not enough to substantiate that "the fastener can be extracted when pulled by the extension without damage to the fastener". The Examiner has revised the rejection of this limitation to make clear it is inherent that the fastener can be pulled by the extension without damage to the fastener due to the spring nature of the spring fastener that will permit the deformation of the engagement springs when a force is applied to the extension and thereby permit the disengagement of the spring and the slot since it has been held that a claim is anticipated if each element of the claim is found, either expressly described or under principles of inherency, in a single prior art reference or that the claimed invention was previously known or embodied in a single prior art device or practice. *Kalman v. Kimberly-Clark Corp.* 218 USPQ 789.

4. The arguments presented against Smith are moot because Smith is no longer used in the rejection of the claims and was inadvertently left in the prior rejection and corrected on this Office Action.

5. The Applicant argues that Osterland has a concave engaging surface 50 that was identified as the hindrance portion and depression without any distinction and that a mere bend can not be considered a depression. This argument fails to persuade. The Examiner has revised the rejection in order to make clear that the hindrance is located between the peak 37 and the free end of each spring. This hindrance comprises a depression or bent or concave engaging surface 50 whose side near the peak serves to

Art Unit: 3677

retain the clip in engagement with the slot of the second part or member as required by the claims and the surface of the concave engaging surface defines a ripple as seen in the figures. Especially, since the claims only require a depression and a concave engaging surface when taken with respect to its outer limits (the free end and the peak) do form a depression irregardless of whether it is a mere bent or not. Therefore, Osterland meets these claim limitations.

6. The Applicant argues that Examiner fails to point out what elements are considered the deepest part, the back side substantially lacking a front side and a width for the depression and a ripple defining the depression and that Osterland fails to disclose these limitations. The Examiner fails to be persuaded by this argument. The Examiner has revised the rejection of these limitations to make clear what are being considered the different elements and this revision makes clear what are the different elements and how the claim is met following the same principles discussed in the prior paragraph.

7. Regarding to claims 23, 24, 44, 58 and 72, the Applicant argues that the Examiner fails to point out how Vassiliou teaches "the material from which the spring fastener was made from has a thickness and the front points of the outside bards are

8. Applicant's arguments with respect to claims 13, 32, 40, 54, 61 and 66 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Art Unit: 3677

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Smith et al. (US 6,381,811 B2), Smith et al. (US 6,527,471 B2), Smith et al. (US 6,648,542 B2), Dickenson et al. (US 6,718,599 B2), Smith et al. (US 6,846,125 B2) and Dickenson et al. (US 6,868,588 B2) are cited to show state of the art with respect to spring fasteners having some of the features being claimed by the current application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth C. Rodriguez whose telephone number is (571) 272-7070. The examiner can normally be reached on M-F 07:15 - 15:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on (571) 272-7075.

Submissions of your responses by facsimile transmission are encouraged. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-6640.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/692,828


Page 31

Art Unit: 3677

you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

Ruth C. Rodriguez
Patent Examiner
Art Unit 3677

rcr
December 11, 2006


ROBERT J. SANDY
PRIMARY EXAMINER